

E/2

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/659,468	SHAKUTO ET AL	
	<b>Examiner</b>	<b>Art Unit</b>	
	Susan S. Lee	2852	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed 3/29/06.
2. ☒ The allowed claim(s) is/are 1-17, 53, 56, 59, 62-89 and 116-142.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |                                                                                                                     |                                                                                        |
|---------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)                                                    | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment                               |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|                                                                                                                     | 9. <input checked="" type="checkbox"/> Other <u>See Continuation Sheet</u> .           |

Continuation of Attachment(s) 9. Other: consideration of papers filed 1/19/06 & 6/8/06.

### **REASONS FOR ALLOWANCE**

The following is an examiner's statement of reasons for allowance:

The primary reason for allowance of claims 1-17, 53, 56, 59, 62-66, 69, 70, 73-89, 127, and 138 is the inclusion of a blade member that is fixed to a vibratable member configured to flex in a direction of flexure, and a vibrating unit that vibrates the vibratable member in the direction of flexure so that the end of the blade member does not curl toward the image carrier. This is found in all of claims 1-17, 53, 56, 59, 62-66, 69, 70, 73-89, 127, and 138, but not disclosed nor suggested by the prior art of record.

The primary reason for allowance of claims 67 and 68 is the inclusion of a blade member that is fixed to a vibratable member. A vibrating unit vibrates the end of the blade member to thereby clean toner remaining on the image carrier and so that the blade does not curl toward the image carrier. The amplitude of vibrations of the end of the blade member can be set as desired. This is found in all of claims 67 and 68.

The primary reason for allowance of claim 71 is the inclusion of a blade member that is fixed to a vibratable member. A vibrating unit vibrates the end of the blade member to thereby clean toner remaining on the image carrier and so that the blade does not curl toward the image carrier. An amplitude controlling unit that changes amplitude of vibrations of the end of the blade member when the toner image is being formed and when toner image is not being formed. This is found in all of claim 71, but not disclosed nor suggested by the prior art of record.

The primary reason for allowance of claim 72 is the inclusion of a blade member that is fixed to a vibratable member. A vibrating unit vibrates the end of the blade

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member to thereby clean toner remaining on the image carrier and so that the blade does not curl toward the image carrier. An amplitude controlling unit that changes amplitude of vibrations of the end of the blade member based on at least one of an amount of toner deposited on the image carrier, number of images formed, environmental conditions, and an amount of toner replenished. This is found in all of claim 72, but not disclosed nor suggested by the prior art of record.

The primary reason for allowance of claim 116 is the inclusion of the vibrating unit that vibrates the end of the blade member so it does not curl. The vibrating unit is a piezoelectric element that is plate like and fixed to the vibratable member. The piezoelectric element has an electrode, and the electrode is electrically connected to the vibratable member. This is found in all of claim 116, but not disclosed nor suggested by the prior art of record.

The primary reason for allowance of claim 117 is the inclusion of the vibrating unit that vibrates the end of the blade member so it does not curl. The vibrating unit is a piezoelectric element and has a fixed end and a free end, and the piezoelectric element is fixed to the vibratable member between the fixed end and the free end. This is found in all of claim 117, but not disclosed nor suggested by the prior art of record.

The primary reason for allowance of claim 118 is the inclusion of the vibrating unit that vibrates the end of the blade member so it does not curl. The vibrating unit is a piezoelectric element that is laminated type piezoelectric element that displaces the vibratable member in a laminating direction as d-33 direction. This is found in all of claim 118, but not disclosed nor suggested by the prior art of record.

The primary reason for allowance of claim 119 is the inclusion of the vibrating unit that vibrates the end of the blade member so it does not curl. The vibrating unit is fixed to the vibratable member, and the vibratable member is stiffer in a portion where the blade member is fixed than in a portion where the vibrating unit is fixed. This is found in all of claim 119, but not disclosed nor suggested by the prior art of record.

The primary reason for allowance of claim 120 is the inclusion of the vibrating unit that vibrates the end of the blade member so it does not curl. The vibrating unit is fixed to the vibratable member, and the vibratable member is stiffer than the blade member, and a distance between the end of the blade member and an end of the blade member is between one to two times a thickness of the blade member. This is found in all of claim 120, but not disclosed nor suggested by the prior art of record.

The primary reason for allowance of claim 121 is the inclusion of the vibrating unit that vibrates the end of the blade member so it does not curl. The vibrating unit is fixed to the vibratable member, and the vibratable member is stiffer than the blade member, the vibratable member having an end, wherein the end of the blade member and the end of the vibratable member are at same level or the end of the blade member protrudes towards the image carrier than the end of the vibratable member. This is found in all of claim 121, but not disclosed nor suggested by the prior art of record.

The primary reason for allowance of claims 122 and 123 is the inclusion of the vibrating unit that vibrates the end of the blade member so it does not curl. A plurality of vibrating units is arranged at predetermined interval along width of the vibratable

member. This is found in all of claims 122 and 123, but not disclosed nor suggested by the prior art of record.

The primary reason for allowance of claim 124 is the inclusion of the vibrating unit that vibrates the end of the blade member so it does not curl. The end of the blade member is formed with a material having less affinity for the toner than other portion of the blade member. This is found in all of claim 124, but not disclosed nor suggested by the prior art of record.

The primary reason for allowance of claim 125 is the inclusion of the vibrating unit that vibrates the end of the blade member so it does not curl. An external additive is added to the toner, and the first end of the blade member is formed with material having less affinity for the external additive than other portion of the blade member. This is found in all of claim 125, but not disclosed nor suggested by the prior art of record.

The primary reason for allowance of claims 126, 131, 134, and 137 is the inclusion of the vibrating unit that vibrates the end of the blade member. An amplitude of vibrations of the end of the blade member is smaller than an average particle size of the toner. This is found in all of claims 126, 131, 134, and 137, but not disclosed nor suggested by the prior art of record.

The primary reason for allowance of claim 128 is the inclusion of the vibrating unit that vibrates the end of the blade member. An amplitude controlling unit that changes amplitude of vibrations of the end of the blade member when the toner image

is being formed and when toner image is not being formed. This is found in all of claim 128, but not disclosed nor suggested by the prior art of record.

The primary reason for allowance of claims 129, 132, and 135 is the inclusion of the vibrating unit that vibrates the end of the blade member. The end of the blade member is formed with a material having less affinity for the toner than other portion of the blade member. This is found in all of claims 129, 132, and 135, but not disclosed nor suggested by the prior art of record.

The primary reason for allowance of claims 130, 133, and 136 is the inclusion of the vibrating unit that vibrates the end of the blade member. An external additive is added to the toner, and the first end of the blade member is formed with material having less affinity for the external additive than other portion of the blade member. This is found in all of claims 130, 133, and 136, but not disclosed nor suggested by the prior art of record.

The primary reason for allowance of claim 139 is the inclusion of the vibrating unit that vibrates the end of the blade member. A vibrating unit that vibrates the vibratable member at frequency of between 17 kilohertz and 50 kilohertz so that the end of the blade does not curl. This is found in all of claim 139, but not disclosed nor suggested by the prior art of record.

The primary reason for allowance of claim 140 is the inclusion of the vibrating unit that vibrates the vibratable member that the blade member is fixed to. A vibrating unit that vibrates the vibratable member at frequency of at least 1.5 kilohertz so that the

end of the blade does not curl. This is found in all of claim 140, but not disclosed nor suggested by the prior art of record.

The primary reason for allowance of claims 141 and 142 is the inclusion of the inclusion of the vibrating unit that vibrates the end of the blade member so the end of the blade member does not curl toward the image carrier. The blade member is made of elastic material . This is found in all of claims 141 and 142, but not disclosed nor suggested by the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

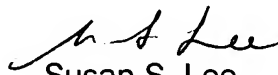
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan S. Lee whose telephone number is 571-272-2137. The examiner can normally be reached on Mon. - Fri., 10:30-8:00, Second Monday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Gray can be reached on 571-272-2119 or 571-272-2800 (Ext. 52).



The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Susan S. Lee  
Primary Examiner  
Art Unit 2852

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